



## Ayer Hitam Forest Reserve, Puchong

August 10, 2012 by JungleBoy | 37 Comments

The Ayer Hitam forest reserve in Puchong is one of the most precious tracts of remaining lowland dipterocarp forest in highly urbanized Selangor state. Originally covering 4270 hectares and gazetted as a forest reserve way back in 1906, it has suffered from a series of de-gazettements throughout the years, until it is now only some 1200 hectares. Even this is being reduced as I speak, as developers continue to quietly eat away at the borders of the reserve. The forest is now totally surrounded by “concrete jungle”.

The reserve is leased out to a nearby local university, University Putra Malaysia (UPM) since the 1990s, for 80 years, as a living “laboratory” for students to conduct research, but as I see it, its future is far from assured. Another tract of forest towards the north, the Bukit Cherakah forest reserve, has already suffered greatly from surrounding housing development despite being the nation’s Agro-Forestry Park, and is rapidly being whittled down to a few hundred hectares from its original 1300 hectares; the Ayer Hitam forest reserve will likely end up the same way as well.

### CATEGORIES

Coastal  
rainforest

Conservation

General

Hill rainforest

Lowland  
rainforest

Montane  
rainforest

Rainforest  
flora

The rainforest  
environment

Waterfalls and  
rivers

### ARCHIVES

► 2019

► 2018

► 2017

► 2015

► 2014

► 2013

▼ 2012

### RECENT POSTS

- Hutan Kita Exhibition
- Berembun Forest Reserve, Negeri Sembilan
- Mass Deaths of the Orang Asli at Kuala Koh
- Krau Wildlife Reserve
- Taman Negara National Park
- Climbing the Giants and taking their Portraits
- Our haze season
- Pasoh Forest Reserve
- Gunung Pulai’s forest in peril
- Lower montane rainforest
- Kuala Sepetang
- Forest Reserves are not “Permanent” in Malaysia

*A typical scenario in Malaysia:*

Septemb **PAGES**

## About

## Contact

## Rainforest layers

## Dipterocarp trees

## Leeches

## Privacy Policy

## TAGS

Amazon Borneo bukit seraya

Chengal Coastal

rainforest Congo

deforestation

dipterocarp

dipterocarp forest dipterocarps

evergreen gunung pulai

Gunung Telapak Buruk

hill dipterocarp forest

**jungle** kelah fish Kenyir

dam Kenyir Lake koompassia

excelsa logging lowland

dipterocarp forest

Lowland rainforest

## Malaysia

mangrove mengaris

merapoh montane

forest montane

rainforest peninsular

malaysia port dickson

rainforest

Sabah selangor seraya streams

Sungai Petang **Sungai**

Relau sungai yu

taman negara

tanjung tuan tapang Tasik

Kenyir trees tropical

rainforest tualang

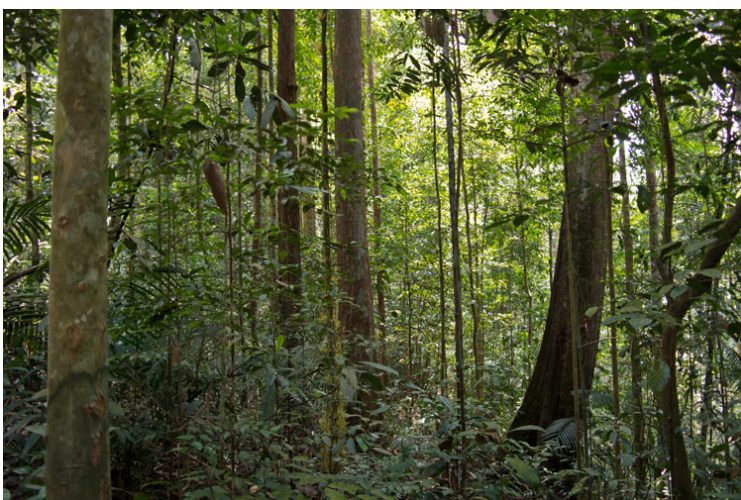




The living greenery of the forest “reserve” is marred by more and more development right up to – and in many cases, into its boundaries. Notice the new housing project in the lower right that has already eaten into a portion of the forest. The trees left on the edge will suffer high mortality rates.

## The Facts

Ayer Hitam forest reserve is classified as a lowland dipterocarp forest of the Kelat-Kedondong type, with a lesser number of dipterocarps per hectare, and more individuals of the Kelat (*Eugenia* species) and Kedondong (*Canarium* species) in contrast to other dipterocarp forests elsewhere in Malaysia. This forest used to cover much of Cyberjaya and Putrajaya as well, but as you know, all of it has been turned into oil palm plantations or built-up land, since.



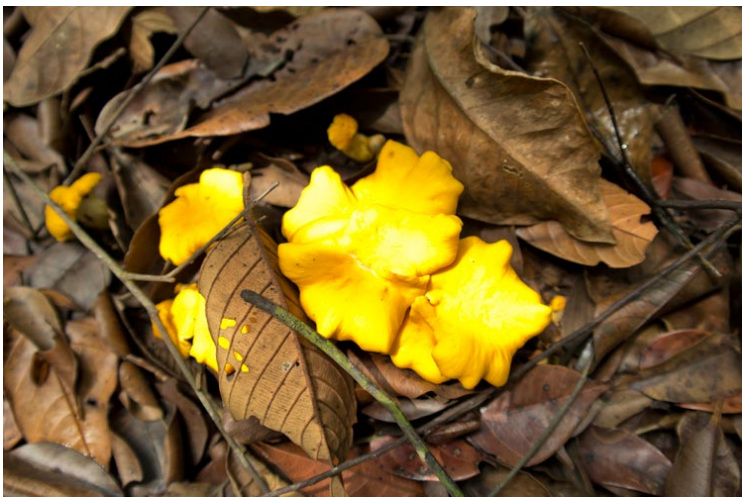
The beautiful interior of the forest. If you overlook the lack of very big trees, you could still mistake it for being a virgin, primary dipterocarp forest. There is a flowering tree in the center of the photo. Flowering on the trunk is called cauliflory.



Another view of the forest from within.



The lovely sight looking up towards the forest canopy. The leaves of the central tree were shimmering in the evening light.



This bright yellow fungus or mushroom stood out among the leaves.





Leguminous plant with bright orange seed pods and shiny black seeds. A species of *Archidendron*; possibly *Archidendron contortum*.

The forest's character and the underlying geology appear to be quite unique relatively, but you will have to be a seasoned jungle explorer to understand why I say this. Although the forest has been logged in the past, it still manages to retain a great deal of its original rainforest character within this small area.



This is likely *Selaginella doederleinii* Hieron, a fern that thrives in well-drained but moist areas of lowland forest in Malaysia. The locals call it *cakar ayam*, maybe because it looks like chicken feet.

Surprisingly, Ayer Hitam forest reserve still contains an untouched river basin as the remaining water catchment area is somewhat enclosed by the surrounding hills and have not (yet) suffered great disturbance. These streams are perhaps the strongest testament to the conservation value of the Ayer Hitam

forest. They are crystal clear, and teeming with aquatic life like fishes, shrimp, crabs, algae, and specialized flora.



The streams of Ayer Hitam forest are of great beauty. I have never noticed such vegetation in other waterfalls/streams in Selangor.

The riparian flora is unique, quite unlike most other rivers and waterfalls throughout Selangor. In fact, they remind me more of the streams and rivers in Johor (Endau Rompin being an example) and Borneo. The rocks are not the typical granite boulders, but seem to be sandstone, forming slow moving streams with deep pools, white sand banks, and small delightful (terraced) waterfalls throughout their length. Where else in the whole of Selangor can you find such streams and waterfalls?



*Dipteris lobbiana*, a riverine fern that is commonly seen in Borneo, but not so common in Peninsular Malaysia. It grows profusely in the streams of Ayer Hitam forest.

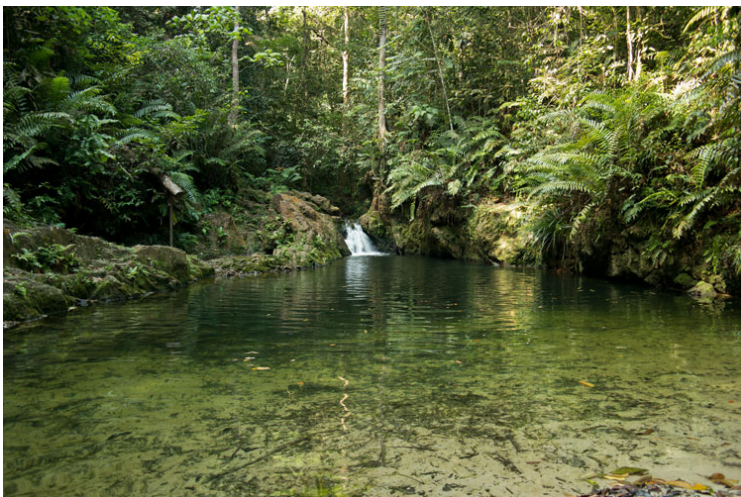


---

The riverine flora is dominated by the elegant *Dipteris lobbiana*, and a grass-like rheophyte. Three main rivers drain the reserve – The Rasau, Biring, and Nasih rivers. However, the Nasih and Biring river have been severely compromised by land development. What remains of the remaining streams in the Ayer Hitam forest reserve will disappear forever, if greed has its way and their catchments are destroyed by further development.



The “Blue Lagoon”, a pool of crystal clear water, teeming with fish. It is really quite unbelievable that such pristine (and fragile) beauty can still exist in a pocket of rainforest that is totally surrounded by man-made “concrete jungle”.



Another view of the “Blue Lagoon”. Will this “Garden of Eden” remain for future generations to come? This all hinges on protecting and maintaining the integrity of the Ayer Hitam forest ecosystem.



The “Blue Lagoon” waterfall. The area of the pool beneath the waterfall is VERY deep and dangerous. I was told it by UPM staff that it is 13m deep, directly beneath the waterfall.

A highlight of the forest is the “Blue Lagoon”, a pool along the Rasau river with a small waterfall feeding into it. The pool may be small and seemingly shallow; however, it is 13 meters deep at the end below the waterfall and is filled with tree trunks! Its color also changes according to the weather. During rainy seasons the water will turn a bluish-turquoise color, while during the dry season, the water is yellowish-emerald in color. **NB:** You will need permission by UPM to enter this area.

The Temuan orang asli who have lived in the area for the past 400 years have a tale to tell of this waterfall – They say that there was once a man who dived into the deep end of the pool, but he did not come out alive. What floated to the surface instead were just his intestines; hence they named the waterfall after this morbid episode (I can’t recall what name it was exactly).





Deeper in the forest lies another taller waterfall that is about 10 meters high. All this within the small confines of the Ayer Hitam forest.... And all this will be ruined if development continues to eat away the forest.

The highest peak in the reserve is a hill with twin peaks at an altitude of 233 m a.s.l. Most of the reserve sits on hilly terrain, but the best part of the forest reserve is on an upland plateau that can be quite flat in many places. This is also where the best quality forest in the reserve remains.

There are a few trees over 60-70 cm in diameter, but next to no trees over 1 meter in diameter. This is normal for logged-over forests. There are a few trees that still stand around 40 meters in height, left-overs from past logging, but most of the tallest trees are no more than 35 meters tall or less.



Deeply fluted trunk of *Ixonanthes reticulata* or Inggir burong (Malay name).





---

Possibly the largest tree in the Ayer Hitam forest, this is apparently a Jelutong tree (*Dyera costulata*) with a diameter of at least 120-130 cm at breast height (dbh). It is much larger than virtually all the other trees in the entire forest reserve. However, before logging started, such large trees (and even larger) were plentiful in this forest.

In terms of tree diversity, Ayer Hitam forest reserve has one of the lowest figures for any tropical rainforest in Malaysia (less than a third of normal tree diversity). The plant life is much more interesting though, with some very rare species of small plants and herbs found here. The palm undergrowth is beautiful and diverse, with *Eugeissona*, *Oncosperma* and *Licuala* species being fairly abundant.



A female Archduke butterfly (*Lexias pardalis dirteana*).



This half eaten leaf presents an amusing sight in the forest. The predator (likely a caterpillar or some bug), took the trouble to eat all around the leaf at specific intervals and into a specific depth, as

you can see. This is probably due to toxins within the leaf which prevented the predator from eating in deeper.

---

Wildlife is also rare in the forest, and it is strangely quiet most of the time. There used to be tapirs and panthers living in the forest according to the aborigines (orang asli), but I'm not sure if this is still the case anymore. Hunting pressure from the nearby residential areas would have wiped out most of the wildlife a long time ago. Small mammals that still survive in the forest include leaf monkeys, macaques, a few gibbons, slow loris, wild boar, and various rodents. The birdlife also has declined in conjunction with the surrounding development, according to UPM staff. There used to be Argus pheasants in the forest even as recent as the 1990s, but not anymore. Meanwhile, the herpetofauna (reptiles/amphibians) and insect life is still rich and diverse.

### **Ayer Hitam forest today**

These days, nearby residents throng the forest reserve every day, especially on weekends, simply to do their exercise. This "traffic load" has been increasing in recent years. The heavy traffic has resulted in very eroded and wide jungle paths, which of course, will negatively impact the immediate environment alongside the trails to some extent. Trash and litter are also being left behind as a "side effect" of human traffic.





Groups of dead trees in the Ayer Hitam forest are VERY common now, and should be a big concern. They may denote some kind of fungal infection affecting the trees, or perhaps simply, climate change. But whatever it is, this is a relatively recent phenomenon and because the trees are the pillars of the forest, mass deaths like this will affect the forest negatively.



Dead trees are frequently encountered and they seem to have died only in the past couple of years. So not only has the forest suffered from logging in the past, but now, many of the trees are dying.

UPM has understandably been alarmed by the adverse impact of visitors and in recent years, has had episodes of closing off the forest to the general public, only to relent after some *noise* from the public. Currently, they have restricted access to the waterfall/stream area; only a certain portion of the main trail loop is open to hikers. This situation can still change though.

In my opinion, the best way to ensure this forest remains for the generations to come is to come up with a concrete long-term management plan, and perhaps turn this entire forest reserve into a state park/research-educational park of Selangor with managed zones of differing priority. UPM may not have the resources to police the borders of the forest reserve, and each time a housing development happens next to the border of the reserve, at least a



---

few hectares of forest will get destroyed (and it's likely some developers conveniently dump their construction trash inside the forest, out of sight).

Also, development dramatically increases the mortality rate of all the trees at the fringe while frequently silting up nearby ephemeral streams, resulting in small ponds with dying trees. You can see this effect at all forest areas that are located next to housing areas (e.g. Bukit Cherakah and Kota Damansara). Many forest trees at the fringe are not adapted to live in a changed environment and will die, over time.



Trigona stingless bees and their nest, a hole in a tree trunk lined with resin. These bees cannot sting.

The surrounding “creeping” encroachment from all sides (as clearly seen from Google Maps) is likely the biggest threat to the integrity of the Ayer Hitam forest. In the past, there have been proposals to turn part of the place into a cemetery, and a part of it was once used as a waste/garbage dump. The biggest threat is the housing/apartment projects that have already been carving up ALL the forest areas fringing the Klang Valley. People take for granted the forest will be around forever. Unfortunately, it won't!

Without concrete and determined conservation plans, the fragile environment of this forest will continue to be degraded continuously, until there is nothing of value left, one day. I do not sound optimistic because

as long as human civilization continuously values money and materialism over everything else, they will eventually end up destroying this very home they live on.

*Larger photos and other photos can be viewed at **my Flickr gallery**.*

Share this:

Like



*Categories:* Lowland rainforest | *Tags:* Ayer Hitam, forest reserve, lowland dipterocarp forest, Malaysia, Puchong, rainforest | [Permalink](#)

---

## 37 COMMENTS

[Leave a reply →](#)



**Krys**

April 8, 2013 at 7:59 pm

I completely agree with your solution. If UPM don't allow the public access to this natural wonder, then they will find no allies in their attempts to fend off the developers. if people don't know the place is there or what damage is occurring, then why will they help protect it? If UPM continue with the current "keep out!" policy, there will be nothing left for anyone to "keep out" \*FROM\*.

AHFR needs to be a proper, fully protected state park that fully engages with the public, before it becomes just another part of the concrete monstrosity that surrounds it.





---

**save our forest**

May 30, 2014 at 10:53 am

very interesting write up thanks. i love hiking ... is there any directions or sketch map on where to hike and where to park .. i know your write up is about the flora rather than where to hike and how

Keep them articles coming and if you have a facebook post, there will be more followers as with Friends of BukitKiara which is about to be raped further the developers intent of ripping whatever green to make room for rich people's bungalows.. the forest is common folks recreation...

**JungleBoy**

May 31, 2014 at 8:07 am

@ save the forest

The main Puchong trail is a circular loop and it is a relatively easy one way track all the way in and out. The entrance is at Jalan Wawasan 5/1.

**natural resources student**

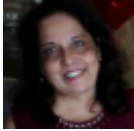
September 1, 2014 at 5:48 pm

I'm one of the natural resoucers students.basically what I have been learned during my studies is we should protect and conserve this forest.I'm so suprisingly because behind all these building and many construction that occurs in puchong,there were the hidden forest that still keep our natural resoucers.I agree in order to keep conserve and protect we make it as reserve forest.in other way,these forest should be commercializes as the ecotourism park because with the strategic place that was located at the center of the city.

---

**Miriam**

September 9, 2014 at 8:05 am



Some years ago a residents association in the Puchong area approached me to assist them. The part of the forest closest to their homes was being targeted for a large cemetery. We were making some progress for a few months in engaging the authorities in dialogue. Then suddenly it seemed all the residents 'lost interest' in pursuing the matter any further. It may have been a good thing. Would you know some anything of this matter? I know some of the Temuan community who have been discouraged from entering the remaining forest. Sometimes they sneak in to 'recharge' 😊



**JungleBoy**

September 9, 2014 at 2:43 pm

@ Miriam,

Yes, I heard about the proposal to convert part of the forest reserve into a cemetery a few years ago. But I believe the plan has been scrapped. 😊



**Amani**

September 11, 2014 at 1:08 pm

Nice pictures! Would like to know, do you need permission to enter the forest reserve? And how do you ask for permission to enter the blue lagoon?



**JungleBoy**

September 16, 2014 at 12:39 pm

@ Amani

You don't need permission to enter, if you take the Jalan Wawasan route which has been approved. As for the Blue Lagoon, you need to ask permission from the UPM (University Putra Malaysia Serdang) authorities, and most probably through a formal written request.





**NR.**

October 8, 2014 at 6:43 pm

it is possible if I want to make this place as one of my project in my final year project,can I do a few assesment at this forest for my thesis??if you don't mind,would you like to share how the procedure I have to do to get into this place in a legal way.



**JungleBoy**

October 9, 2014 at 4:12 am

@ NR

You need to contact the UPM authorities for this. <http://www.upm.edu.my> If not mistaken, you need to contact Mr Paiman, Faculty of Forestry.



**LoveOurNature**

November 24, 2014 at 4:55 pm

I'm a students here.I learn a lot from this forest.From what i had observe, people that come illegally through Jalan Wawasan will bring along their foods and beverages. They throw rubbishes everywhere and i with my classmates need to collect the rubbish. This forest is actually a reserve forest. Whoever that come illegally to this forest will be fined under National Forestry Act.

Denda maksima RM 10,000 dan/atau dipenjarakan maksima 3 tahun  
Kesalahan termasuk memasuki Hutan Simpanan Kekal; penggunaan jalan hutan, melepaskan ternakan; membenarkan ternakan meragut. Mencari, mengambil atau memindah apa-apa hasil hutan atau mineral; membersih atau membajak tanah dengan tujuan pertanian atau maksud lain; Menggunakan bahan beracun atau bahan letupan bagi maksud menangkap ikan atau memasang jerat atau menjebak)



**JungleBoy**

November 24, 2014 at 5:04 pm

@Ikhwan

Just my observation, it could also be UPM students, because the other day I saw a lot of rubbish from what appears to be overnight campers and there were empty spray cans, ropes, and plastic on the forest floor. Maybe they are doing research there, and they do not bother bringing out their rubbish. Malaysians really need to CHANGE.



**Petr Judl**

February 2, 2015 at 4:37 am

Thank you for your article. Just visited the reserve yesterday for the first time. While it's obvious this is a secondary forest, it's still a gem in the middle of the concrete jungle. Living myself close to Bukit Kiara, I watch closely the development of 'development' there. Obviously as these last remaining green patches of forest become surrounded by the city, the pressure from the development companies will ever grow. It's an easy pitch, who doesn't want to have his new house next to a forest? Except that it only last that long, once you move in to your new forest view home, the developers are already busy at work to 'develop' that forest view of yours into another real estate with a forest view. And so on and so on, till there is none left.

Hope the reserve can withstand the pressures of the development for a long time to come. This land is too precious. Developers know it and they can put a price on it in \$\$\$. But what is the price of the undeveloped forest? Priceless!



**JungleBoy**

February 2, 2015 at 5:28 am

@ Petr Judl

Agreed, that is how it often works in Malaysia ("Prime" forest view soon becomes urban jungle view instead). Thanks for your comment.

---

**iheartnature**

February 18, 2015 at 12:05 pm

So are u saying that the Blue Lagoon is no longer open for the public these days? 😞

---

**JungleBoy**

February 18, 2015 at 3:33 pm

@ iheartnature

Blue Lagoon has been closed to the public since ages ago, which is understandable, because hordes of people visiting such a small waterfall every day would quickly ruin it. However, the main hiking trail was closed to the public not long ago, but reopened after a hue and cry.

---

**jup**

March 29, 2015 at 6:49 am

@jungleboy...how can i go there...who should i contact?

---

**JungleBoy**

March 31, 2015 at 1:47 pm

@ jup

The location is at Jalan Wawasan 5/1, which is off Laman Puteri 1, and behind the Sri Cempaka Apartments. If you go on a weekend, you should see many cars and people there.

---



**tissueeee**

May 24, 2015 at 1:29 am

People should think about the booming human population in relation to all the development and deforestation. Have no kids, or at most two.

---



**JungleBoy**

May 24, 2015 at 3:41 pm

@ tissueeee

Maybe it's not so much about the number of people, but more an argument about "Quantity" vs "Quality"? I think the effect of just 1000 people who wreak havoc on the environment, and totally don't give any hoots, is probably worse than 1,000,000 people who love, respect, and take pains to care for the environment, as well as understand how our "footprint" impacts upon everything. Looks like the latter scenario is an idealistic world that only exists in the imagination? 😊

---



**SF**

June 30, 2015 at 3:31 am

Hi, I live in Kinrara Residence which is opposite side of the public entrance to the forest via Tmn. Wawasan. From my observation after almost 2 years living here, there is one group of hasher who usually run in this forest on certain weekend. They will park their cars in Taman Damai Utama and enter via a small river stream nearby.

Can I do mountain biking in this forest? It can be fun.

---



**JungleBoy**

June 30, 2015 at 7:25 am

@ SF

I doubt you can do mountain biking here. The university authorities would not permit



---

this because it could damage the flora. A much better place for your activity would probably be Taman Lembah Kiara which is an old abandoned rubber estate with a good network of trails.

---



**Clarence MJM**

February 13, 2017 at 11:38 am

Just for awareness, 30 years ago that's 1987, an adult male tiger was caught under wire on its paw, meant to catch wild boar, eventually the big cat was rescued and became a star stud in melaka Zoo under the name Punchong tiger and lived almost 18 years until he died due to old age somewhere in 2004, this punchong tiger had mated with numerous tigresses and the cubs are all over the world zoo as ambassador of Malayan Tiger species, on my last visit there, the zoo management had made the tiger as in a real life stuff preserved, btw punchong tigers paw was amputated, u could see that in the model there, there were confirmed rumours that big cats were still prowling at air Hitam in the early 2001-4, now highly impossible there are any there but black leopards and other smaller cats like golden cat still thrive there.... That's for now, but remember 1987 is the year punchong tiger captured and used for breeding purposes.



**JungleBoy**

February 13, 2017 at 11:48 am

@ Clarence MJM

Thanks for the info. Interesting...



**mashi**

September 2, 2017 at 5:40 pm

can we still hiking there? cause my friends and i plan to go there.

**JungleBoy**

September 3, 2017 at 5:20 am

@ mashi

Sure, you can hike there and it is open as long as people behave, because it all depends on the goodwill of UPM. But I am not sure if you can find parking there or not on weekends, because it can be very crowded on weekends.

---

**Dylan**

September 11, 2017 at 10:59 am

I'm a repeat visitor. Somehow find myself back at your site every time I research about a forest. Really well written articles – facts and depth with little or no over-exaggeration. A great resource. Thank you!

---

**JungleBoy**

September 11, 2017 at 4:35 pm

@ Dylan

Thanks for your kind words 😊

---

**Aiman Arman**

October 26, 2017 at 6:02 am

Greetings Jungle Boy,

My name is Aiman and currently a postgraduate students in UPM. I found this article very interesting and seems like a good material for my thesis since Ayer Hitam Forest Reserve is one of my study site. May I know where did you retrieve the information listed in this post? So that I can properly cite your blog and the original source. If you do, please email me at [aimanforwork@gmail.com](mailto:aimanforwork@gmail.com)

Thanks and hope to hear more from you in the near future.

And to all readers, I'm looking for local communities living around the Ayer Hitam



---

forest area. If you do and interested to be one of my respondents, please don't hesitate to contact me through my email.

---



**JungleBoy**

October 27, 2017 at 6:03 am

@ Aiman

There used to be a small PDF brochure produced by UPM for Puchong Ayer Hitam forest and also a book that may be found in a library. Maybe you can still locate them. You may try to contact a certain Mr Paiman if he is still working in UPM. Today, Ayer Hitam forest is the only "viable" forest habitat left in the whole of Klang Valley. If you want to cite me, you can just mention this site.

---



**Maria**

February 7, 2018 at 10:03 am

@ JungleBoy

Do you have any idea when this FR became isolated?

---



**JungleBoy**

February 7, 2018 at 10:31 am

@ Maria

The forest became smaller and smaller from the end of the 1980s and into the 1990s, when large parts were cut off from the original forest reserve to convert into the development you now see.

---



**Sarah**

March 2, 2018 at 3:05 am

I am a resident at Duet Residensi condominium, Jalan BK 6. 3 days ago, bulldozer went in to the Ayer Hitam Forest Reserve which is located at the back of the condo and started to clear up the forest for

---

the Air Langat 2 project. Feeling extremely sad to see those old trees being chopped down and the greenery has now become bald. I've tried to make reports to authorities but was told the project has been approved some years ago. Is there anything I can do?

---



**JungleBoy**

March 2, 2018 at 4:51 am

@ Sarah

Unfortunately, this is the fate of ANY forest in our country as long as it is not a national park or under some proper conservation legislation, and even then, illegal logging and other illegal activities always frequently take place. Ayer Hitam is in a precarious situation as it is surrounded by humans....err development, on all sides and I'm seeing the forest constantly shrinking along the edges in the past 6 years 😊 We do not know if the land being cleared now is under UPM Lease or not, as it is supposed to be a research forest area under that lease.

You could report the clearing to UPM authorities, to MNS (Malaysian Nature Society), and to Elizabeth Wong's office among others – <http://bit.ly/2tabp8b>

---



**ian**

October 3, 2018 at 3:15 am

Hi! I tried to click on the Flickr link but it says album doesn't exist..  
Really great writing and photos.

---



**JungleBoy**

October 3, 2018 at 3:32 am

@Ian

Thanks for letting me know, the Flickr gallery link has been fixed.

---



**CK Kor**

June 7, 2019 at 8:20 am

Dear Hikers,

I was graduated from UPM and this forest is one of our study site.

I fully understand how excited when you find a water fall but I would like to draw your attention that back in year 2004, when there is a dry season, the water become extremely less and I spot there is a lot of water snake in it.

I'm glad that you enjoy hiking in this forest but do not risk yourself.

---

## Leave a Reply

Required fields are marked \*.

Message \*

Name \*

Email \*

Website

☐ Save my name, email, and website in this browser for the next time I comment.

Solve : \*

13 × 18 =

POST COMMENT

This site uses Akismet to reduce spam. [Learn how your comment data is processed.](#)

---

[Privacy & Cookies Policy](#)



[← Previous Post](#)

[Next Post →](#)

---

Rainforest Journal © 2022. All Rights Reserved. | [Privacy Policy](#)

[Top](#)